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10/603,896	06/24/2003	Jeffrey Allen Neilson	100201650-I	4887
7590 HEWLETT-PACKARD COMPANY Intellectual Property Administration P.O. Box 272400 Fort Collins, CO 80527-2400			EXAMINER TENTONI, LEO B	
		ART UNIT 1732	PAPER NUMBER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/603,896

Filing Date: June 24, 2003

Appellant(s): NEILSEN ET AL.

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Matthew B. McNutt  
For Appellant

**EXAMINER'S ANSWER**

MAILED  
AUG 08 2007  
GROUP 1700

This is in response to the appeal brief filed on 09 May 2007  
appealing from the Office action mailed 03 November 2006.

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**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: The rejection of claims 1-19 under 35 USC §112, second paragraph is withdrawn.

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#### **WITHDRAWN REJECTIONS**

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. The rejection of claims 1-19 under 35 USC §112, second paragraph.

#### **(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

#### **(8) Evidence Relied Upon**

5,181,045 A	SHIELDS et al	01-1993
5,428,383 A	SHIELDS et al	06-1995
6,401,002 B1	JANG et al	06-2002

#### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jang et al (U.S. Patent 6,401,002 B1) in combination with either Shields et al (Shields I, U.S. Patent 5,181,045 A) or Shields et al (Shields II, U.S. Patent 5,428,383 A).

Jang et al (see the entire document, in particular, col. 5, lines 45-54; col. 7, lines 30-40; col. 8, lines 27-39) teaches a solid freeform fabrication process for making an object including ejecting a material to form a layer of an object wherein the layer contains a colorant, except that Jang et al does not explicitly teach causing a reaction that keeps a colorant near a surface of an object (note that since Jang et al

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teaches forming a layer of an object that contains colorant, the colorant is at (and visible at) the surface of the layer (and hence, the object), which meets the limitation of "near a surface of the object"), which is taught by Shields I (see the entire document, in particular, col. 2, lines 1-11; col. 2, line 26 to col. 3, line 44) and Shields II (see the entire document, in particular, col. 3, lines 15-49) (note that Shields I and Shields II, like the instant application, teach causing a reaction (e.g., precipitation or "crashing") which prevents the colorant from migrating (or "bleeding") to an undesired area and thus, the colorant will remain in a desired area (at or near a surface of an object, so that the coloring is visible)) and such would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Jang et al in view of either Shields I or Shields II principally in order to manufacture an object having a desired color and/or a desired color pattern.

**(10) Response to Argument**

Appellant argues (page 7) that the teaching or suggestion to make a claimed combination (of references) and a reasonable expectation of success must both be found in the prior art references (and not based on appellant's disclosure). Examiner responds that the teaching or suggestion to make a claimed

combination (of references) and a reasonable expectation of success need not be both found in the prior art references (see *KSR Int'l Co. v. Teleflex, Inc.*, 82 USPQ2d 1385 (U.S. 2007)).

Appellant argues (page 7) that the combination of Jang et al and Shields I cannot support a case of *prima facie* obviousness as to claims 1-19 because the references fail to disclose all of the elements of the present invention, there is no motivation to combine the reference teachings, and one skilled in the art would have no reasonable expectation of success. Examiner responds that the cited references do disclose all of the elements of the present invention (as stated in the rejection), there is motivation to combine the references (as stated in the rejection) and one skilled in the art would have a reasonable expectation of success (as both references are directed to making objects having color).

Appellant argues (page 8) that Jang et al does not teach "ejecting a first material to form a layer of a three-dimensional object, the first material containing a colorant". Examiner responds that Jang et al does teach this claim limitation (note, in Jang et al, col. 5, lines 53-54; col. 7, lines 30-35; col. 8, lines 35-39).

Appellant argues (pages 8 and 9) that Shields I teaches preventing or reducing mixing of two different ink colors at a

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common border of the two inks, and that this is not the same as causing a reaction that keeps colorant near a surface of a three-dimensional object. Examiner responds that the teaching of Shields I is the same as causing a reaction that keeps colorant near a surface of a three-dimensional object because Shields I teaches causing a reaction (e.g., precipitation or "crashing"; a pH reaction) which prevents the colorant from migrating (or "bleeding") to an undesired area and thus, the colorant will remain in a desired area (e.g., at or near a surface of an object, so that the coloring is visible). Also, note that this teaching of Shields I is comparable to that found in paragraph [0030] of the instant published application (i.e., Shields I teaches the same mechanism (e.g., reaction) as found in paragraph [0030] of the instant published application and thus, one would inherently get the same prevention of migration of the colorant).

Appellant argues (page 9) that Shields I is indifferent as to the location or migration of the dyes except for along a common border between two different ink colors. Examiner responds that even if this is so, the common border is at, or near, the surface of the object and thus, this meets the claimed limitation of "near a surface of the object".

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Appellant argues (page 9) that the modified process of Jang et al would still permit colorants to migrate into the deposited layer and away from the surface of the object. Examiner responds that that even if the color were to migrate away from the surface of the object, the migration would not be such as to make the object of Jang et al colorless because Jang et al clearly teach that the ejected material contains a colorant. Furthermore, the layers of Jang et al, just like the layers in any solid freeform fabrication process, are very thin (in order to increase part accuracy) and any migration of colorant away from the surface of the object would still keep the colorant at least "near a surface of the object" as claimed (note that none of the instant claims, especially claim 1, recites a specific distance as to what qualifies as "near a surface of the object").

Appellant argues (pages 9 and 10) that one skilled in the art would understand that the Shields I method to increase bleed resistance at the border of two inks does not necessarily imply a solution for causing a reaction that keeps a colorant near a surface of a 3-D object. Examiner responds that, while such a solution may not necessarily be implied in general, such a solution is implied in the instant case because like the instant application (see paragraph [0030] of the published application),

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Shields I teaches causing a reaction (e.g., precipitation or "crashing"; a pH reaction) which prevents colorant from migrating (or "bleeding") to an undesired area and thus, the colorant will remain in a desired area (e.g., at or near a surface of the object, so that the coloring is visible).

Appellant argues (page 10) that the combination of Jang et al and Shields II cannot support a case of *prima facie* obviousness as to claims 1-19 because the references fail to disclose all of the elements of the present invention, there is no motivation to combine the reference teachings, and one skilled in the art would have no reasonable expectation of success. Examiner responds that the cited references do disclose all of the elements of the present invention (as stated in the rejection), there is motivation to combine the references (as stated in the rejection) and one skilled in the art would have a reasonable expectation of success (as both references are directed to making objects having color).

Appellant argues (page 11) that Jang et al does not teach "ejecting a first material to form a layer of a three-dimensional object, the first material containing a colorant". Examiner responds that Jang et al does teach this claim limitation (note, in Jang et al, col. 5, lines 53-54; col. 7, lines 30-35; col. 8, lines 35-39).

Appellant argues (pages 11) that Shields II teaches preventing or reducing mixing of two different ink colors at a common border of the two inks, and that this is not the same as causing a reaction that keeps colorant near a surface of a three-dimensional object. Examiner responds that the teaching of Shields II is the same as causing a reaction that keeps colorant near a surface of a three-dimensional object because Shields II teaches causing a reaction (e.g., precipitation or "crashing"; a pH reaction) which prevents the colorant from migrating (or "bleeding") to an undesired area and thus, the colorant will remain in a desired area (e.g., at or near a surface of an object, so that the coloring is visible). Also, note that this teaching of Shields II is comparable to that found in paragraph [0030] of the instant published application (i.e., Shields II teaches the same mechanism (e.g., reaction) as found in paragraph [0030] of the instant published application and thus, one would inherently get the same prevention of migration of the colorant).

Appellant argues (page 11) that Shields II is indifferent as to the location or migration of the dyes except for along a common border between two different ink colors. Examiner responds that even if this is so, the common border is at, or

near, the surface of the object and thus, this meets the claimed limitation of "near a surface of the object".

Appellant argues (page 12) that the modified process of Jang et al would still permit colorants to migrate into the deposited layer and away from the surface of the object.

Examiner responds that that even if the color were to migrate away from the surface of the object, the migration would not be such as to make the object of Jang et al colorless because Jang et al clearly teach that the ejected material contains a colorant. Furthermore, the layers of Jang et al, just like the layers in any solid freeform fabrication process, are very thin (in order to increase part accuracy) and any migration of colorant away from the surface of the object would still keep the colorant at least "near a surface of the object" as claimed (note that none of the instant claims, especially claim 1, recites a specific distance as to what qualifies as "near a surface of the object").

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

Leo B. Tentoni

Leo B. Tentoni

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